



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

SEP 29 1998

4WD-RPB

G Kendall Taylor, P G
Director
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Bureau of Land and Environmental Control
South Carolina Department of Health
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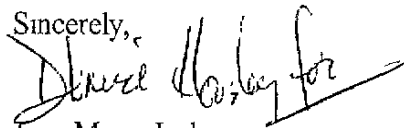
HYDROGEOLOGY

SUBJ Transmittal of Environmental Indicator (EI) Memo
SCDHEC Concurrence Requested
Southern Wood Piedmont
Spartanburg, South Carolina
EPA ID Number - SCD 049 690 001

Dear Mr Taylor

The U S Environmental Protection Agency Region 4 has prepared the enclosed EI for SCDHEC review, modification and/or concurrence

Should you or your staff have questions, please contact me at 404-562-8480

Sincerely,


Jacquie Marie Jack
North Programs Section
RCRA Programs Branch

Enclosure Southern Wood Piedmont EI Memo



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4WD-RCRA

SUBJ Evaluation of Southern Wood Piedmont's status under the RCRIS Corrective Action
Environmental Indicator Event Codes (CA725 and CA750)
EPA ID Number SCD 049 690 001

FROM Jacq Marie Jack
North Programs Section
RCRA Programs Branch

THRU Caron Falconer
Chief, North Programs Section
RCRA Programs Branch

TO G Kendall Taylor, P G
Director
Division of Hydrology
Bureau of Land and Environmental Control
SCDHEC

Concur _____

This memo is written to formalize an evaluation of Southern Wood Piedmont's (SWP's) status in relation to the following Resource Conservation and Recovery Information System (RCRIS) corrective action codes

- 1) Human Exposures Controlled Determination (CA725),
- 2) Groundwater Releases Controlled Determination (CA750)

The application of these event codes at SWP's facility adheres to the event code definitions found in the Data Element Dictionary for RCRIS

Concurrence of the RCRA Programs Branch Chief is required prior to entering these event codes into RCRIS. Your concurrence with the interpretations provided in the following paragraphs and the subsequent recommendations is satisfied by dating and signing above

II. HUMAN EXPOSURES CONTROLLED DETERMINATION (CA725)

There are five (5) national status codes under CA725. These status codes are

- 1) YE Yes, applicable as of this date
- 2) NA Previous determination no longer applicable as of this date
- 3) NC No control measures necessary
- 4) NO Facility does not meet definition
- 5) IN More information needed

The first three (3) status codes listed above were defined in January 1995 Data Element Dictionary for RCRIS. The last two (2) status codes were defined in June 1997 Data Element Dictionary.

Note that CA725 is designed to measure human exposures over the entire facility (i.e., the code does not track SWMU specific actions or success). Every area at the facility must meet the definition before a YE or NC status code can be entered for CA725. The NO status code should be entered if there are current unacceptable risks to humans due to releases of hazardous wastes or hazardous constituents from any SWMU(s) or AOC(s). The IN status code is designed to cover those cases where insufficient information is available to make an informed decision on whether or not human exposures are controlled. If an evaluation determines that there are both unacceptable and uncontrolled current risks to humans at the facility (NO) along with insufficient information on contamination or exposures at the facility (IN), then the priority for the EI recommendation is the NO status code.

In Region 4's opinion, the previous relevance of NA as a meaningful status code is eliminated by the June 1997 Data Element Dictionary's inclusion of NO and IN to the existing YE and NC status codes. In other words, YE, NC, NO and IN cover all of the scenarios possible in an evaluation or reevaluation of a facility for CA725. Therefore, it is Region 4's opinion that only YE, NC, NO and IN should be utilized to categorize a facility for CA725. No facility in Region 4 should carry a NA status code.

This particular CA725 evaluation is the first evaluation performed by EPA for Southern Wood Piedmont. Because assumptions have to be made as to whether or not human exposures to current media contamination are plausible and, if plausible, whether or not controls are in place to address these plausible exposures, this memo first examines each environmental media (i.e., soil, groundwater, surface water, air) at the entire facility including any offsite contamination emanating from the facility rather than from individual areas or releases. After this independent media by media examination is presented, a final recommendation is offered as to the proper CA725 status code for Southern Wood Piedmont.

The following discussions, interpretations and conclusions on contamination and exposures at the facility are based on the following reference documents:

Part A Application, dated March 21, 1989

1991 Annual Ground-Water Quality Assessment Report, dated February 28, 1992

1992 Annual Ground-Water Quality Assessment Report, dated March 1, 1993

1997 Annual Ground-Water Quality Assessment Report, dated February 27, 1998,

Rationale for Southern Wood Piedmont's Approach to Assessment and Corrective Action Under RCRA, dated September 28, 1992

Risk Assessment for Standing Stone Branch, dated October 8, 1992

Responses to EPA Region IV Comments on Southern Wood Piedmont's Approach to Assessment and Corrective Action under RCRA, with additional RFI Requirements, dated June 9, 1994

SWP collected data on groundwater, soil and surface water over a number of years and as such SWP takes the position that the collection of this data is the equivalent of an RFI report. Although EPA does not concur with SWP's position that their data is the equivalent of an RFI, EPA electronically compiled this data and used this compilation of data to determine the Environmental Indicators.

III. FACILITY SUMMARY

SWP operated a wood treating plant in Spartanburg, South Carolina. The plant coated pressure treated railroad ties and utility poles with creosote. Creosote and its by-products contaminate this site. Naphthalene, other volatile organic compounds and polycyclic aromatic hydrocarbons are the main constituents of concern. Contamination is found in the soil, groundwater and stream sediments at the site. The site is closed. EPA issued a post closure permit to SWP which is under appeal.

IV. MEDIA BY MEDIA DISCUSSION OF CONTAMINATION AND THE STATUS OF PLAUSIBLE HUMAN EXPOSURES

AIR

Air is reasonably expected not to be contaminated above relevant action levels.

SWP controls the release of air contamination from the groundwater by limiting exposure of the groundwater to the atmosphere. The only access of the groundwater to the atmosphere is through the existing groundwater monitoring wells. When SWP is not sampling the wells, they are locked and capped. When SWP is sampling the wells they do so in the open atmosphere. Although there are

sufficient constituents present to contaminate the groundwater, an insignificant amount of contamination is released into the open atmosphere by evaporation during the ground water sampling. Therefore, there is no significant human exposure to atmospheric contamination from groundwater releases.

SWP controls the release of air contamination from the soil to the atmosphere by maintaining a vegetative cover. Therefore, there is no human exposure to atmospheric contamination from soil releases.

There is no release of air contamination from the surface water to the atmosphere as there is no surface water contamination. Therefore, there is no human exposure to atmospheric contamination from surface water.

Based on the above discussions, releases to air from groundwater, soil and surface water contaminated by SWMUs and/or AOCs at the facility is not expected to be occurring above relevant action levels.

GROUNDWATER

Groundwater is contaminated onsite and contaminated offsite.

Releases from SWMUs and/or AOCs contaminated groundwater onsite with naphthalene, other volatile organic compounds and polyaromatic hydrocarbons at concentrations above relevant action levels. Both the groundwater in the fractured bedrock and the groundwater in the overlying soil layer are contaminated. On site SWP controls human exposure by limiting access to the groundwater.

Groundwater at the site exists in the shallow soil and partially weathered rock (soil/pwr) aquifer system, and in the fractured bedrock aquifer system. The site was a wood preserving site, therefore, the constituents of concern are the metals chromium (Maximum Contaminant Level (MCL) of 100 parts per billion (ppb)), copper (Secondary MCL of 1 ppm), and arsenic (MCL of 50 ppb). Other constituents of concern include volatiles and semi-volatile compounds, including naphthalene, phenanthrene, 2-methylnaphthalene, 1,2-dimethylbenzene, 1,3-dimethylbenzene, 1,4-dimethylbenzene, toluene, carbazole, dibenzofuran, among other constituents. Of these constituents, only toluene has an established MCL (MCL = 1 ppm). There is a tap water Risk Based Concentration for dibenzofuran of 150 ppb. Otherwise, the remaining constituents do not have established limits. According to data included in the 1997 Annual Ground-Water Quality Assessment Report, dated February 27, 1998, the greatest concentrations of contamination in terms of volatile organics in groundwater are found in well MW-50A. Concentrations of total semivolatile organic compounds in MW-50A in 1997 was reported to be 58.5 mg/l based on samples collected in March 1997. This well is located offsite to the north of the site on the property referred to as the "Ivey" property. The greatest concentrations of dissolved phase contamination in groundwater onsite are found in MW-59,

which is located adjacent to the northern property boundary. The site also reportedly has two areas in which Dense Non-Aqueous Phase Liquids (DNAPL) exist. One area is located in the vicinity of Oil Recovery (OR) wells OR-1, OR-2, OR-3, OR-7, OR-8 and OR-9 and extends in a generally northeasterly direction to encompass wells MW-25B, MW-52, MW-52A, MW-52B, and MW-52C. This latter set of wells (MW-25B, MW-52, MW-52A, MW-52B, and MW-52C) are located offsite on the Ivey property. A second area of DNAPL is located along the northern property boundary and extends in an easterly direction from wells MW-30, MW-30B, MW-30C, MW-30D, MW-30E, and MW-30F past well MW-29. Some of this second DNAPL area appears to extend onto the Ivey property. According to the Part A Application, no drinking water wells exist on or within 1/4 mile of the facility property boundary.

A groundwater corrective action system has been in operation at the facility since 1991 with startup of the trench recovery system. Additional wells designed to capture both dissolved and free-phase (DNAPL) plumes became operational in 1992 (1991 and 1992 Annual Ground-Water Quality Assessment Reports). Today, there are 22 groundwater recovery wells recovering a combination of dissolved phase and free-phase (DNAPL) contamination.

There is a potential for plausible human exposures to this groundwater contamination. This is due primarily to the existence of significant groundwater contamination offsite. Due to the fact that significant groundwater contamination exists offsite, Southern Wood Piedmont cannot prevent the installation of a drinking water well on property not under its direct control. Therefore, plausible human exposures to contaminated groundwater are not controlled.

Onsite the only human exposure to the groundwater is through the monitoring wells. These wells are capped and locked unless SWP is sampling the well. When SWP samples each well, SWP uses EPA approved protocol for handling the contaminated groundwater. This includes wearing gloves when collecting the water samples and properly sanitizing sampling equipment.

As offsite monitoring wells indicated contamination, SWP purchased the property. However, today the Ivey property which is contiguous with the northern portion of the SWP site is currently contaminated with constituents of concern significantly above action levels.

Contaminated groundwater exists at the facility and has moved off the property. It is reasonable to assume that contaminated groundwater from the facility could plausibly impact humans offsite. Currently, SWP has a thirteen-well pump and treat system installed and operating at the facility. SWP will add six more wells to this recovery system by early 1999.

Based on the above discussion, groundwater is contaminated onsite and offsite. SWP controls human exposures to groundwater contamination onsite. Human exposure to offsite contamination are not controlled. Control measures for groundwater is being installed but have not demonstrated effectiveness in containing the plume of contamination.

SURFACE WATER

Surface water associated with the facility is not contaminated at this time.

Standing Stone Branch stream is the only surface water found at the facility site. Investigations during the time of plant operation indicated SWP contaminated the onsite surface water of Standing Stone Branch by direct discharge of waste waters and by discharge from surface lagoons. SWP closed these lagoons when the plant closed. There is no longer any surface discharge at this site. Although there is no current surface water contamination, past discharge activities contaminated stream sediments. Down stream from the facility Standing Stone Branch flows through a residential neighborhood. Human exposure could be occurring by consumption of fish from the stream or exposure of local residents by dermal contact with stream sediments.

Based on the above discussion, plausible human exposures could occur from ingesting fish or by dermal contact with stream sediments. There is no current human exposure from surface water which must be controlled.

SOILS

SWP contaminated soil onsite but not offsite.

Onsite SWP removed top soil contaminated with creosote and its by-products including volatile organic compounds and polycyclic aromatic hydrocarbons and its by products, replaced the top soil with a clean soil cap and seeded the area. Those surface areas which were not heavily contaminated were seeded and planted in trees. SWP controls human exposure to inhalation or ingestion of contaminated soil by maintaining the vegetative cover. There is no evidence of offsite soil contamination.

Based on the above discussion, plausible human exposures to contaminated soil are controlled.

V. STATUS CODE RECOMMENDATION FOR CA725:

CA725 NO Plausible human exposures are present but not controlled

As explained in Section IV, because human exposures to contamination are not currently controlled for migration of groundwater offsite it is recommended that CA725 NO be entered into RCRIS.

VI. GROUNDWATER RELEASES CONTROLLED DETERMINATION (CA750)

There are five (5) status codes listed under CA750

- 1) YE Yes, applicable as of this date
- 2) NA Previous determination no longer applicable as of this date
- 3) NR No releases to groundwater
- 4) NO Facility does not meet definition
- 5) IN More information needed

The first three (3) status codes listed above were defined in January 1995 Data Element Dictionary for RCRIS. The last two (2) status codes were defined in June 1997 Data Element Dictionary.

The status codes for CA750 are designed to measure the adequacy of actively (e.g., pump and treat) or passively (e.g., natural attenuation) controlling the physical movement of groundwater contaminated with hazardous constituents above relevant action levels. The designated boundary (e.g., the facility boundary, a line up gradient of receptors, the leading edge of the plume as defined by levels above action levels or cleanup standards, etc.) is the point where the success or failure of controlling the migration of hazardous constituents is measured. Every contaminated area at the facility must be evaluated and found to have the migration of contaminated groundwater controlled before a "YE" status code can be entered.

If contaminated groundwater is not controlled in any area(s) of the facility, the NO status code should be entered. If there is not enough information at certain areas to make an informed decision as to whether groundwater releases are controlled, then the IN status code should be entered. If an evaluation determines that there are both uncontrolled groundwater releases for certain units/areas (NO) and insufficient information at certain units/areas of groundwater contamination (IN), then the priority for the EI recommendation should be the NO status code.

In Region 4's opinion, the previous relevance of NA as a meaningful status code is eliminated by the June 1997 Data Element Dictionary's inclusion of NO and IN to the existing YE and NR status codes. In other words, YE, NR, NO and IN cover all of the scenarios possible in an evaluation or reevaluation of a facility for CA750. Therefore, it is Region 4's opinion that only YE, NR, NO and IN should be utilized to categorize a facility for CA725. No facility in Region 4 should carry a NA status code.

This evaluation for CA750 is the first formal evaluation performed for SWP. Please note that CA750 is based on the adequate control of **all** contaminated groundwater at the facility.

The following discussions, interpretations and conclusions on contaminated groundwater at the facility are based on a compilation of electronic data provided by SWP.

VII. STATUS CODE RECOMMENDATION FOR CA750:

CA750 NO Releases to groundwater have occurred, but all groundwater releases at the facility are not controlled

Based on data contained in the documents referenced in Section II and summarized in the groundwater portion of Section IV, releases from SWMUs and/or AOCs have contaminated groundwater at concentrations above relevant action levels

The groundwater is contaminated above relevant action levels SWP implemented non-EPA approved control measures to halt the migration of contaminated groundwater SWP documentation indicates self-imposed stabilization efforts are not effectively controlling the plume SWP will install four additional pump and treat wells and add two already existing wells to its pump and treat system by early 1999 Groundwater monitoring will determine the effectiveness of these actions in containing the plume of contamination In summary there is known groundwater contamination at and emanating from the facility and SWP data demonstrates that the plume of contamination is not controlled Therefore, it is recommended that CA750 NO be entered into RCRIS

VIII. SUMMARY OF FOLLOW-UP ACTIONS

SWP is currently taking measures to stabilize the plume of groundwater contamination These measures include expanding its pump and treat system by adding six wells SWP anticipates these wells will be on line by early 1999 Monitoring information collected after the installation of these six wells will indicate the effectiveness of their current activities